

## EDUCATING THE B40 GROUP OF SOCIETIES TOWARDS A SUSTAINABLE ENVIRONMENT: A CASE STUDY ON RUKUN TETANGGA JELAPANG'S ACHIEVEMENT

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### ABSTRACT

This paper presents the findings made on a research carried out in Jelapang Tambahan, Ipoh, Perak. There are 220 households, mostly from B40 category families, and was identified as one of the dengue-prone villages in the Kinta District. A total of 4,812 dengue cases were detected at end of November 2014 with 13 fatalities, of which some of the fatal cases came from this village. The villagers were ignorant of the importance of keeping the environment clean. Twelve (12) illegal dumpsites were detected in this village prior to the start of this research. An action committee was formed which comprised representatives from Rukun Tetangga Jelapang, the Solid Waste Management Corporation and Ipoh City Watch, with the role of educating the Jelapang Tambahan folks through a series of campaigns and recycling projects. Using Ajzen and Fishbein (1980)'s Theory of Planned Behaviour Model as a guiding factor and Kolb (1984)'s Experiential Learning Theory, the education project via Trash-to-Cash sustainable recycling was launched on 4 April 2015. A collection centre within the community was established where participants were requested to turn in their recyclables twice a month in exchange for cash. Recyclables collected were segregated, weighed and recorded every month from April 2015 to November 2016. Contributors were paid cash in exchange for the recyclables brought to the centre. The data collected were then tabulated and analysed to establish the trend. Results obtained showed that a total of 8,900 kg of recyclables have been collected giving the participants a supplementary income of RM3,850. The 12 illegal dumpsites prior to the start of the project have disappeared, fatal dengue cases had dropped drastically, and the recycling rate was 13.1% which is higher than the national rate of 10% in 2016. Thus, the outcome of this study can help create an impact to the society by changing their behaviour if the right approach is used to educate them.

**Keywords:** *Lifelong Learning, Sustainable Development Goals, Social Business, Trash-to-Cash Recycling System*

## INTRODUCTION

Jelapang Tambahan, a small village located at the outskirts of Ipoh, comprised 220 households with an estimated population of 1,000, the majority of whom are from the bottom 40 percent (B40) group of people. Sixty percent (60%) of the population here are of Indian ethnic group followed by 30 percent Chinese and 10 percent Malay. The residents here have set up the Rukun Tetangga Jelapang under the Department of National Unity and Society Integration to help foster good relationship and to care for their safety and health.

In February 2014, the Perak Health Director has reported that there was a huge jump in dengue cases in Perak with 820 cases compared with 242 cases the previous year. Kinta district where Jelapang Tambahan is located, has the highest with 484 cases. By November 2014, the number of dengue cases in Perak rose to 4,812 with 13 fatalities and the district of Kinta recorded a total of 2,650 cases making it the highest in Perak (The Star, 19 Nov. 2014). Some of the fatal cases in the Kinta District are from Jelapang. In early 2015, Perak recorded a 138 percent jump in dengue cases in the first seven weeks compared to the same period the previous year with five fatal cases.

Ipoh City Watch (ICW), a non-governmental organisation (NGO), headed by the researcher, mooted a cleanliness campaign together with Perak Solid Waste Management Corporation (SWCorp) and Rukun Tetangga Jelapang (RT). A meeting was held in February 2015 to plan for the campaign which included educating the villagers on cleanliness and recycling. On 4 April 2015, the Trash-to-Cash Recycling project was launched at Jelapang Town Hall organised by RT.

Several programmes were held at the village to show how they could segregate the garbage into organic waste, recyclables and trash. The villagers were also taught how to compost their organic wastes and plant vegetables. A recycling collection centre was also established in this village for the convenience of the people. A recycling bin was installed for villagers to drop their recyclables. House-to-house campaigns were also organised together with the Health Department to educate the villagers on the importance of keeping their environment clean and the danger posed by dengue.

Recyclables brought in by the villagers twice a month were weighed according to three main categories; paper, tin and plastics. They were paid based on the weight of each item. These data were recorded for the purpose of finding the impact of the intervention carried out.

Thus, this paper will present the findings of the research and its impact on the community in line with United Nation's Sustainable Development Goals.

## Problem Statements

As mentioned above, the research project was triggered by the alarming dengue cases affecting Perakians in general and the people of Kinta District specifically where 13 fatalities were recorded in November 2014. A gotong royong conducted by Ipoh City Watch together with the Health Department of Perak found many illegal dumpsites, hoarders and low awareness among residents on the need to keep the environment clean.

A few fatal dengue cases were found in Jelapang where the project was mooted. Prior to the start of the recycling project, a total of 12 illegal dumpsites were found in Jelapang Tambahan. Recycling activity was low with some residents doing it voluntarily.

There were about 220 households in Jelapang Tambahan. According to Perak Solid Waste Management Corporation, generally each household produces an average of 5kg of garbage per week. Thus the amount of garbage generated by Jelapang Tambahan folks is estimated at 52,800 kg per year.

## LITERATURE REVIEW

According to Funnell et. al. (2011), the Theory of Planned Behaviour, an extension of the Theory of Reasoned Action (Ajzen & Fishbein, 1980) is based on the notion that ‘humans are rational and have control over what they do.’ They added that the intentions predict their behaviours, if the intentions and the behaviours are defined and measured using the same concepts in relation to the nature and target of the action, and the timing and context of behavior.

Ajzen and Fishbein (1980) posited that a person’s intentions to behave in a particular way is influenced by his/her beliefs about the likely consequences of behaviour, attitudes (whether positive or negative feelings) towards the behaviour and the consequences of the behaviour, and perceptions of norms that is perception of others’ opinions about the behavior (see Figure 1 below).

According to Carreras et. al. (2013), attitudes can be activated via a deliberately controlled process when a person is motivated and has sufficient cognitive capacity for processing the information.

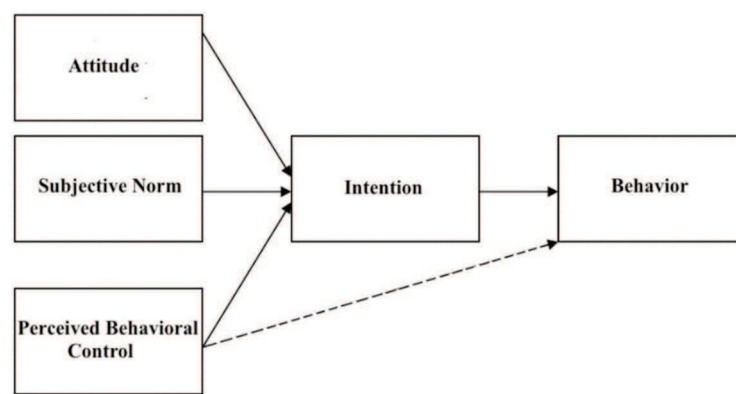


Figure 1: The Theory of Planned Behaviour (Ajzen & Fishbein, 1980)

The Theory of Planned Behaviour by Ajzen and Fishbein (1980) presents mechanisms that turn attitudes into behaviours whereby; it establishes that an intention or disposition to act is the key variable of the behaviour’s explanatory mechanism and it identifies the drivers of behavioural intention that give rise to different mechanisms affecting the disposition to act (reputation itself, convenience, group pressure, moral obligation and perceived self-efficacy). Each of these factors explains the reasons that determine an individual’s decision to support a project.

However, Lazaruz (2006), pointed out that an intention is activated by these drivers only when an emotional element is involved. These include; strong positive evaluation, favourable normative pressure (social or personal), awareness of self-efficacy and a positive emotional reaction towards the project.

Before the people’s mindset can be changed by changing their behavior to make the recycling project in Jelapang Tambahan works, they have to be educated, taught and shown how and why the recycling project has to be carried out. The project requires their cooperation, support and involvement. The Kolb Experiential Learning Style approach was adopted to educate the people in line with the concept of lifelong learning and acquiring skills and knowledge in the 21<sup>st</sup> Century where the world is the classroom.

According to Kolb (1984), ‘learning is the process whereby knowledge is created through the transformation of experience’. He added that learning involves the acquisition of abstract concepts that can be applied flexibly in a range of situations. In his theory, the impetus for the development of new concepts is provided by new experiences. Kolb’s experiential learning theory works on two levels: a four-stage cycle of learning and four separate learning styles.

Kolb's four-stage of learning involves; **Concrete Experience** – (a new experience or situation is encountered, or a reinterpretation of existing experience), **Reflective Observation of the New Experience** – (any inconsistencies between experience and understanding), **Abstract Conceptualisation** (reflection gives rise to a new idea, or a modification of an existing abstract concept the person has learned from their experience), and **Active Experimentation** (the learner applies their idea(s) to the world around them to see what happens (Kolb, 2015).

According to McLeod (2014), much of Kolb's theory is concerned with the learner's internal cognitive processes. He added that effective learning only occurs when a learner can execute all four stages of the model which include; (1) having a concrete experience followed by (2) observation of and reflection on that experience which leads to (3) the formation of abstract concepts (analysis) and generalisations (conclusions) which are then (4) used to test hypothesis in future situations, resulting in new experiences.

According to Peterson et. al. (2017), most people have a strong preference for one learning style and tend to avoid or underutilise certain styles. There are nine learning style in the Kolb Experiential Learning Style Inventory, which gave a person access to his/her capabilities to successfully manage any situation and learn from it. The nine learning styles are; Experiencing style, Imagining style, Reflecting style, Analysing style, Thinking style, Deciding style, Acting style, Initiating style, and the Balancing style.

According to McLeod (2014), both Kolb's (1984) learning stages and cycle could be used by teachers to critically evaluate the learning provision typically available to students, and to develop more appropriate learning opportunities. He added that educators should ensure that activities are designed and carried out in ways that offer each learner the chance to engage in the manner that suits them best.

In guiding the villagers or participants of the recycling project at Jelapang Tambahan, Knowles' (1984) four Principles of Andragogy was also referred. The four principles are; adults need to be involved in the planning and evaluation of their instruction, experience (including mistakes) provides the basis for the learning activities, adults are most interested in learning subjects that have immediate relevance and impact to their job or personal life, and adult learning is problem-centered rather than content-oriented.

Training and coaching the adult participants is based on adult learning assumptions postulated by Knowles (1984) which include; adults are self-directed, their own experience becomes a source of learning, they are ready to learn, their learning orientation is problem-centred, and they have internal motivation to learn.

## METHODOLOGY

The objective of this research is to find the impact of intervention carried out on a village so as to help cultivate the recycling culture, reduce garbage from going to landfills or illegal dumpsites and reduce dengue and other related diseases.

The intervention in this project involves educating the participants in Jelapang Tambahan based on the Theory of Planned Behaviour (Ajzen & Fishbein, 1980), Kolb's (1984) Experiential Learning Theory and Knowles' (1984) four Principles of Andragogy.

Intervention carried out include educating the participants of the recycling project in Jelapang Tambahan about the importance of environmental cleanliness and recycling. Prior to the start of the project in early 2015, dengue cases were reported at an alarm level with some fatal cases in this village, majority of whom belongs to the B40 group and generally low in literacy rate. There were 12 illegal dumpsites with several hoarders storing garbage in unoccupied houses.

As most of the residents are members or part of the RT Jelapang team, the main committee members were called in to assist as partner of the project. The researcher who is also the Chairman of Ipoh City Watch, roped in Perak SWCorp and Perak State Health Department to collaborate and assist in the campaign. Several meetings were held to plan for the house-to-house campaign in order to get the residents understand and support the project. On 4<sup>th</sup> April 2015, the recycling project was launched at the Jelapang Town Hall participated by about 200 people.

During the launch, the participants were asked to bring in their recyclables. A briefing session was held explaining how their recyclables are to be segregated. They were also informed of the collection centre and collection schedule. Those who brought their recyclables have their contribution recorded and paid.

Leaflets and house-to-house campaign were carried out twice a month for the first two months to educate the residents. The residents were also assembled from time to time especially on collection day to do more briefing and training on how and why they must practice recycling. Several community programmes cum education training including Pongal, Deepavali, Mother's Day celebration, and Father's Day celebration were organised in this village to engage them and also to appreciate their support. Teaching and learning took place either at the collection centre or via house-to-house briefing and leaflet distributions and also during festive programmes to explain the progress of the recycling projects.

Recyclables brought in to the collection by the participants twice monthly were recorded from April 2015 to November 2016. The results are tabulated and analysed. Its impact was measured in terms of recyclables weight, amount paid out and recycling rates.

The recycling rate was calculated based on the assumption that every household generates an average 5kg of garbage per week or 20kg per month. The total garbage generated from Jelapang Tambahan per month is estimated as 20 x 220 or about 4,400kg. The recycling rate is then obtained by dividing the total amount of recyclables collected by the total garbage generated by the residents. Pre and post interventions were compared to gauge its impact.

## FINDINGS

About 30 percent of the 220 households have contributed towards this project. Others surveyed did contribute to other recyclers and charity organisations which came to their weekly routine collection. At the end of November 2016, the 12 illegal dumpsites have vanished. Dengue cases dropped drastically with no fatal cases reported.

Figure 2 below shows the amount of recyclables contributed by participants of Jelapang Tambahan through 20 collections from April 2015 to November 2016. A total of 8,900kg of recyclables were collected during that period consist of various categories of papers, plastics and metals.

Between April 2015 to December 2015, regular interventions were carried out to see the impact on the contribution of recyclables. From January 2016 until November 2016, the residents were then left to the RT committee to manage. It was found that the monthly contribution has stabilised with average of 400kg collection of recyclables per month.

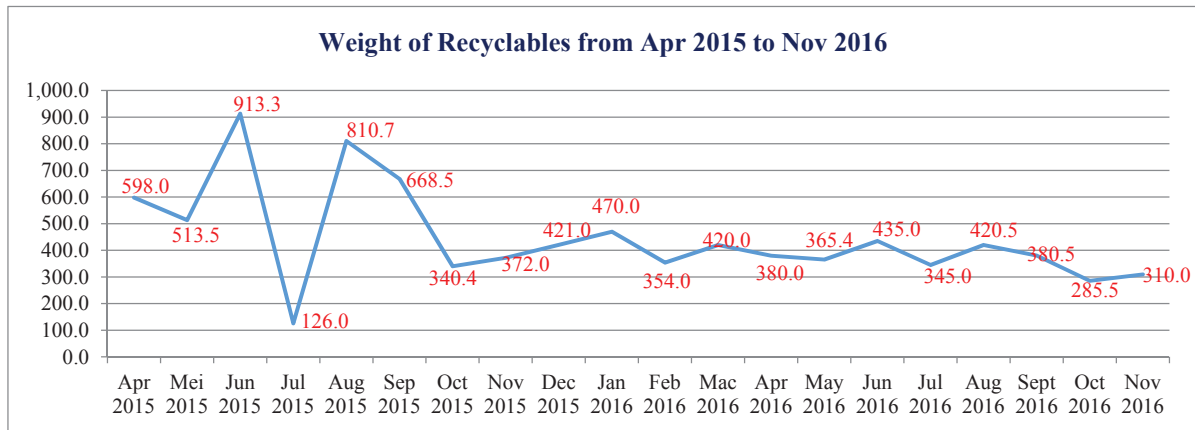


Figure 2: Total Weight of Recyclables from April 2015 to November 2016

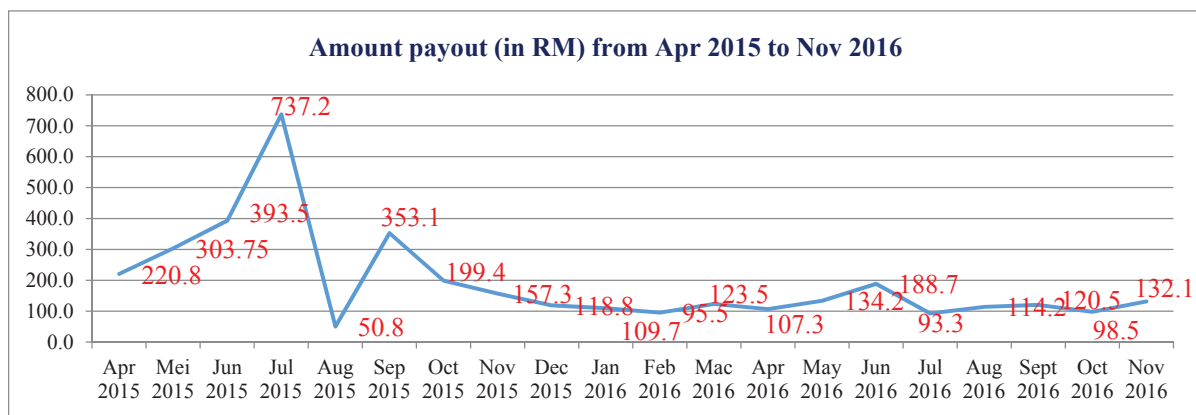


Figure 3: Total Amount Paid Out for Recyclables Collected from April 2015 to November 2016

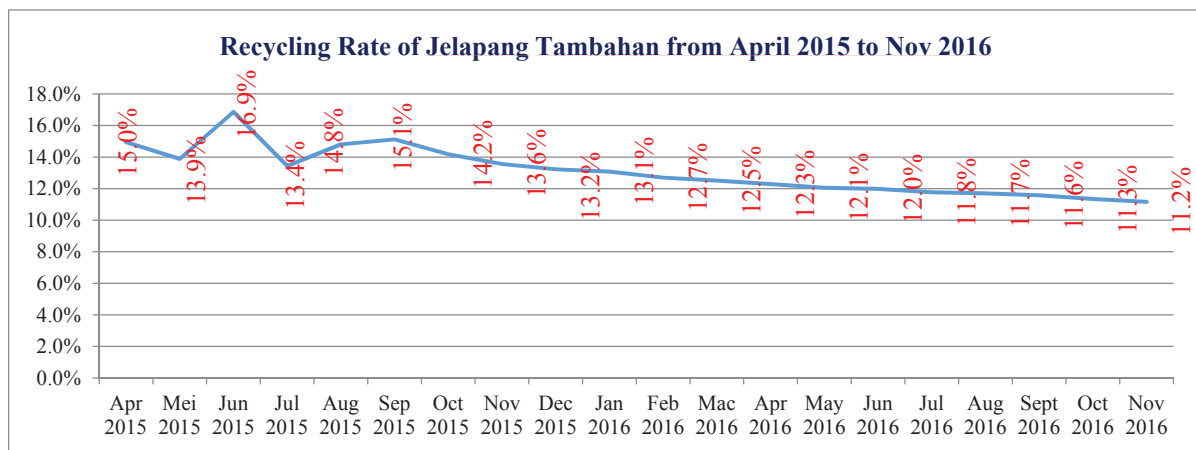


Figure 4: Monthly Recycling Rate Tracking from April 2015 to November 2016

Figure 3 above shows the distribution of amount of cash paid for the recyclables contributed by participants from April 2015 to June 2016. The total amount paid out during period was RM3,850.00. The amount paid corresponds to the contributions made.

Figure 4 above shows the recycling rate of Jelapang Tambahan from April 2015 to November 2016. The average recycling rate was 13.1 percent which is higher than the national average recycling rate of 10 percent.



## DISCUSSION AND CONCLUSION

A total of 8,900kg of recyclables has been contributed by the residents of Jelapang Tambahan from the date it was launched in April 2015 to November 2016. This means that 8,900kg of garbage has been successfully reduced from ending up in the landfill or illegal dumpsites. It also means a saving for the Ipoh City Council of 8,900kg x RM0.30 or RM2,650.00 per year which was normally paid to contractors that collect and send the garbage to the landfill.

The reduction of garbage helps in reducing global warming and climate change as garbage at landfills produce carbon dioxide and methane gas that cause temperature to rise. Thus our efforts together with the community helped to address SDG goal #13 – climate change (see Figure 5 below).

The corresponding amount of RM3,850.00 paid to the contributors of Trash-to-Cash recycling project is very much appreciated by the poor residents as it helps supplement their income. This is fulfilling SDG goal #1 – eradicating poverty and SDG goal #2 – zero hunger.

Illegal dumpsites have vanished and the village is much cleaner today as a result of the awareness campaign and sustainable Trash-to-Cash recycling system which the residents continue to do until today. Dengue cases have dropped and there is no fatal case reported. Thus the project has addressed SDG goal #3 – good health and well-being and SDG goal #15 – life on land.

Recycling helps to reduce plastics from ending up in river and ocean thus helps life under water which is SDG goal #14.



Figure 5: Sustainable Development Goals

The overall results showed that the Ajzen (1980)'s Theory of Planned Behaviour works in the community. The training and education approached provided to the participants by going down to the community and showed them how the recycling project should be carried out via Trash-to-Cash system using Knowles (1984)'s andragogy learning and Kolb (2015)'s experiential learning approach have successfully guided the participants. This fulfills the SDG goal #4 – providing quality education through Lifelong learning. This is very much in line with the concept of education in the 21<sup>st</sup> century where the world is the classroom.

The project has caught the attention of Junior Chamber International Malaysia in collaboration with United Nations Asian Residence. It won the “Best of Best” and “Best in Climate Change” JCIM SDA 2018 awards in September 2018. The project has also helped Rukun Tetangga Jelapang emerged as the best Social Business economy project in 2018 as the supplement income generated by RT Jelapang as a partner in this project helps fund their activities.

## ACKNOWLEDGMENT

We wish to thank the committee members of Rukun Tetangga Jelapang especially the chairman, Mr. Thinakaran and advisor Mr. Pandian, the residents of Jelapang Tambahan led by Madam Ninderjeet Kaur who have allowed us to use her place as collection centre, Director of Perak SWCorp, Puan Hajah Fatimah Ahmad, Perak Health Department team, my Ipoh City Watch committee members and all volunteers who have joined us in carrying out the campaign successfully over the last 3 years.

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